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(54) Title: MONITORING OF TWO-PHASE FLUID FLOW USING A VORTEX FLOWMETER

(57) Abstract: In a method of monitoring two-phase fluid flow a vortex flowmeter is used to generate a signal indicative of the flow regime using the signal components and its fluctuations to determine the phase status of the fluid flow.

WO 2003/102511 A3

# INTERNATIONAL SEARCH REPORT

Internat Application No  
PCT/GB 03/02376

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 G01F1/74 G01F1/32 G01F1/66

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 G01F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC, COMPENDEX

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FOUSSAT A J M, HULIN, J-P: "VERTICAL LIQUID-LIQUID AND LIQUID-GAS TWO-PHASE FLOW MEASUREMENTS WITH A VORTEX FLOW METER"	1-8, 10-17
Y	MEASURING TECHNIQUES IN GAS-LIQUID TWO-PHASE FLOWS, SYMPOSIUM, 1984, pages 651-676, XP001156346 Nancy, France the whole document	9
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>"Statistical characterization of air water bubbly flow using differential pressure drop measurements"</p> <p>PROCEEDINGS OF THE FLUIDS ENGINEERING CONFERENCE,</p> <p>20 - 24 June 1993, pages 137-144,</p> <p>XP009022351</p> <p>Washington, DC, USA</p>	1-8, 10-17
Y	<p>the whole document</p>	9
Y	<p>MI Y ET AL: "FLOW REGIME IDENTIFICATION METHODOLOGY WITH NEURAL NETWORKS AND TWO-PHASE FLOW MODELS"</p> <p>NUCLEAR ENGINEERING AND DESIGN, AMSTERDAM, NL,</p> <p>vol. 204, no. 1-3,</p> <p>February 2001 (2001-02), pages 87-100,</p> <p>XP001020470</p> <p>ISSN: 0029-5493</p> <p>the whole document</p>	9
P,X	<p>PUSAYATANONT M ET AL: "Two-phase flow measurement based on the analysis of the sensor signal from a conventional vortex flowmeter"</p> <p>PROCEEDINGS 11TH INTERNATIONAL CONFERENCE ON FLOW MEASUREMENT (FLOMEKO 2003),</p> <p>12 - 14 May 2003, pages 1-8 of paper 128, XP002264396</p> <p>Groningen, Netherlands</p> <p>the whole document</p>	1-17
A	<p>US 4 876 897 A (DECARLO JOSEPH P ET AL)</p> <p>31 October 1989 (1989-10-31)</p> <p>column 5, line 39 -column 8, line 23;</p> <p>figures</p>	1-17

### Information on patent family members

PCT/GB 03/02376

US 4876897	A	31-10-1989	NONE
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